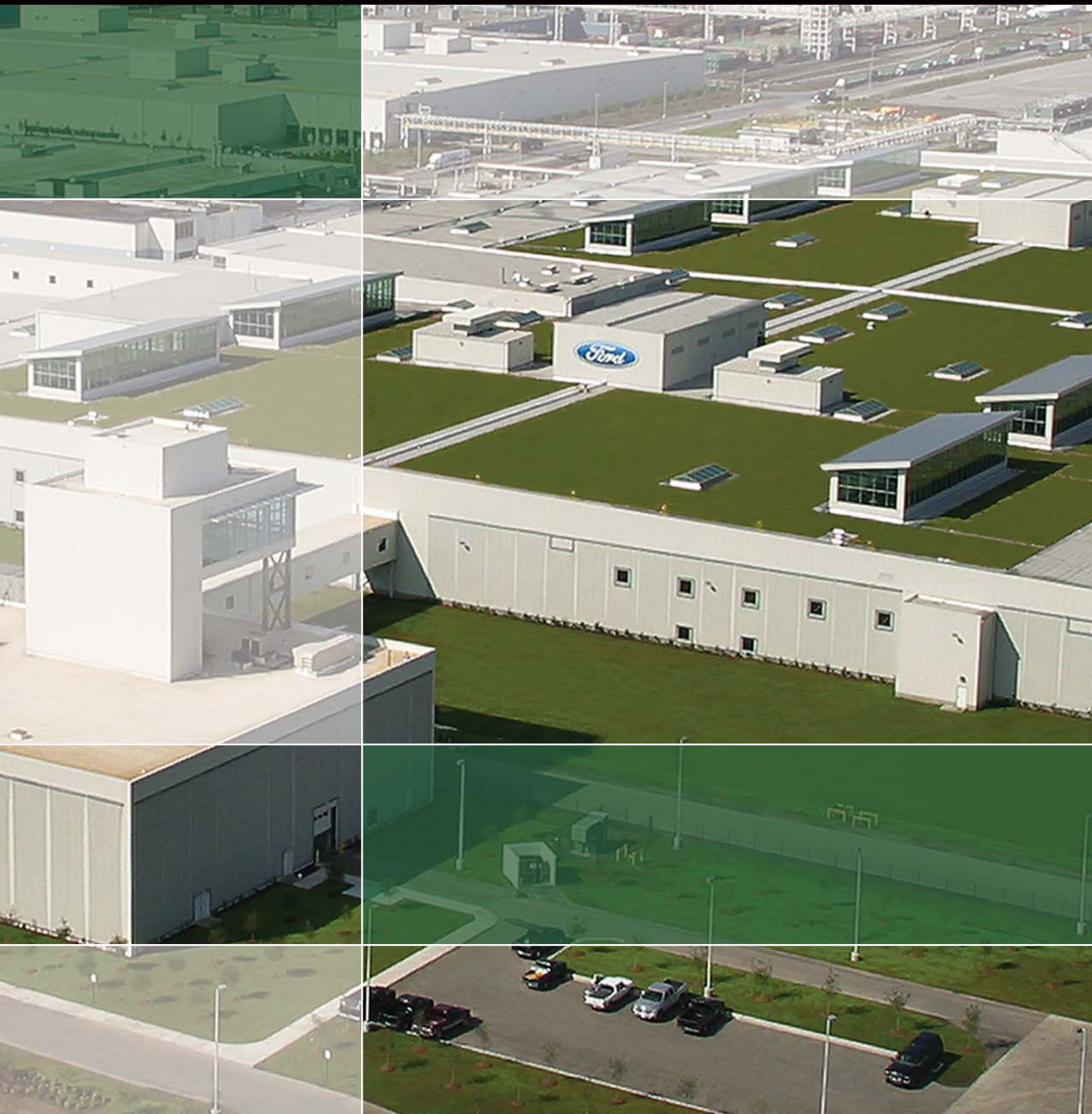


Vegetated Roof Systems



Providing high performance solutions for green applications for over 30 years.



▲ Certain plant options can provide a color palette that changes with the season, enhancing the aesthetic value of a vegetated roof.

Proven

With the increasing recognition of the environmental impact of a roof, many cities and states are implementing initiatives to maximize the opportunity and encourage the use of environmentally friendly roof systems. But while the initiatives may be new, the concept isn't. At least not to Siplast. Our involvement with green and sustainable solutions began over 30 years ago with our original green product: Teranap. Since then, Siplast's continually growing number of green products has evolved into **siplastgreen** – a full range of environmentally responsible, high performance roofing and waterproofing solutions. Siplast**green** products meet a variety of criteria established by the U.S. EPA Energy Star program, California Title 24 Part 6, and the most current United States Green Building Council LEED programs for New Construction and Major Renovations, and for Existing Buildings: Operations and Maintenance.

Of course, **Siplast Vegetated Roof Systems** are the centerpiece of **siplastgreen**. Our comprehensive offering includes both SBS-modified bitumen and PMMA liquid-applied waterproofing options, as well as multiple flashing options, pre-grown vegetated mats, and all the components required for extensive, intensive, and lawn landscaping. So, with Siplast Vegetated Roof Systems, building owners can enjoy the benefits of a vegetated roof with the convenience of a single-source system package.

Quality

Siplast products are manufactured consistently to exacting standards. At all Siplast North American manufacturing facilities, stringent quality control tests are performed on every lot of material we produce to ensure Siplast products meet specified criteria. That's because although meeting current reflectivity, emissivity,

and insulation standards is important, long term performance is paramount. As the company that developed SBS-modified bitumens in the 1960s, Siplast is committed to the emphasis on long-term solutions that has built our strong reputation as an industry leader and innovator. Additionally, we are committed to the continuous study of product design, formulation, and application processes to improve performance and identify green opportunities.

Application

Siplast Waterproofing Systems are installed exclusively by Siplast Select Contractors. These independent professionals have met the qualifications of the toughest contractor certification program in the industry – ours.



▲ The roof of this Philadelphia school features numerous **siplastgreen** products: a Teranap Vegetated Roof area, a bright white Paradiene CR cool roof system, and sustainable Siplast Lightweight Insulating Concrete.



▲ With proper system design and plant selection, building owners can enjoy a vegetated roof system that is low maintenance.

Their proven skill and dedication have demonstrated time and again that they regard themselves as members of a team dedicated to installing great systems for their building owner customers.



Products

Teranap

Siplast first applied its SBS-modified bitumen technology to vegetated applications with the introduction of **Teranap**. The fully adhered, two-ply Teranap System is based on proven roof membrane design. The elastomeric base ply, Terabase, is engineered to retain its elasticity through the rigors of deck movement. The top ply, Teranap, consists of a nonwoven polyester mat impregnated and coated with SBS-modified bitumen. Rolls of Teranap are 2 meters wide and 20 meters long. (Teranap is also available in 1-meter width x 8-meter length.) This coverage means a significant reduction in the number of seams as compared to projects using conventional modified bitumen waterproofing products. With fewer seams, and enhanced flexibility, elasticity, and puncture resistance, high performance Teranap will stand up to the intense demands of vegetated roof applications for years.

Parapro

The built-in root resistant capabilities of liquid-applied Parapro make it a natural choice for vegetated systems and planter waterproofing. The Parapro System is built on advanced polymethyl methacrylate (PMMA) technology

developed for demanding waterproofing applications. Parapro is VOC-compliant, solvent-free, isocyanate-free, and flame-free. It offers significant application advantages over polyester and polyurethane liquid-applied products, including dramatically faster cure times and broader application temperature ranges. The finished application is seamless and fully reinforced. In addition to the benefits of PMMA, the liquid-applied Parapro System offers application efficiency for jobs with difficult access, tight clearances, and odd-shaped penetrations that can be challenging for even the best traditional sheet materials.

Accessories

In a single-source package, Siplast offers all of the components required for vegetated roof installations, including:

- Paragreen Pre-Grown Vegetated Mat.
- Paragrow Soil Growing Medium.
- Paradrain Extensive and Intensive Drainage Mat.
- Parablock Root Barrier.
- Paraguard Perimeter Metal and Drain Protection Components.
- Pedestals and pavers.
- Filter fabric.
- Extruded polystyrene.

▲ **Vegetated Roof Systems can provide dramatic architectural impact, creating distinctive buildings that are environmentally responsible.**

Landscape Options

Both Teranap SBS-modified bitumen and PMMA liquid-applied Parapro can be specified with the landscape options illustrated here.

Extensive

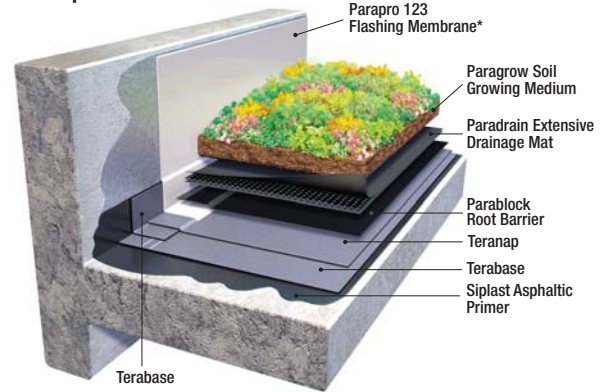
Typical depth of growing medium: 2" – 6"

Typical wet weight: 20 – 25 lb/sf

For building owners who want an attractive green roof with environmental benefits and minimal maintenance, an extensive system is an excellent choice. Recommended plant selections for extensive systems include sedum, grasses, and wildflowers. Extensive vegetated systems:

- Reduce/delay stormwater runoff.
- Help to mitigate the urban heat island effect.
- Require irrigation and fertilization during the establishment period.
- Require minimal maintenance after the establishment period.

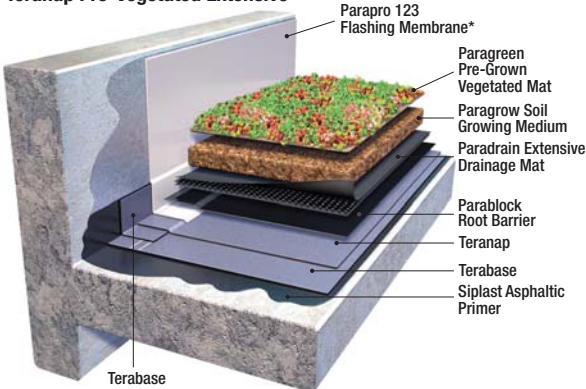
Teranap Extensive



Parapro Extensive



Teranap Pre-Vegetated Extensive



Pre-Vegetated Extensive Systems

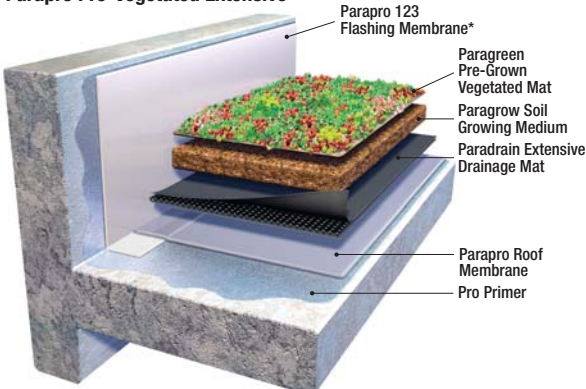
Typical depth of growing medium: 2" – 6"

Typical wet weight: 15 – 25 lb/sf

Characterized as an Extensive system in terms of typical depth of growing medium and weight, a pre-vegetated system is the right choice for building owners who want the benefits of their green roof upon installation. Pre-vegetated sedum mats grown on farms can be installed quickly for immediate impact. Pre-vegetated systems:

- Provide immediate greenscape at installation.
- Reduce/delay stormwater runoff.
- Help to mitigate the urban heat island effect.
- Require irrigation and fertilization during the establishment period.
- Require minimal maintenance after the establishment period.

Parapro Pre-Vegetated Extensive



* Contact Siplast for flashing options.

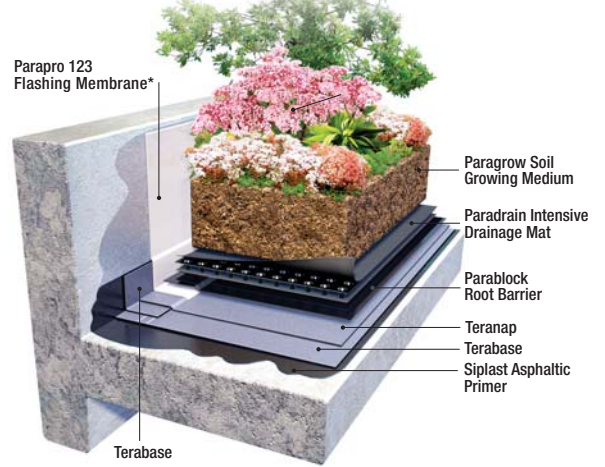
Intensive

Typical depth of growing medium: starts at 8"
 Typical wet weight: starts at 50 lb/sf

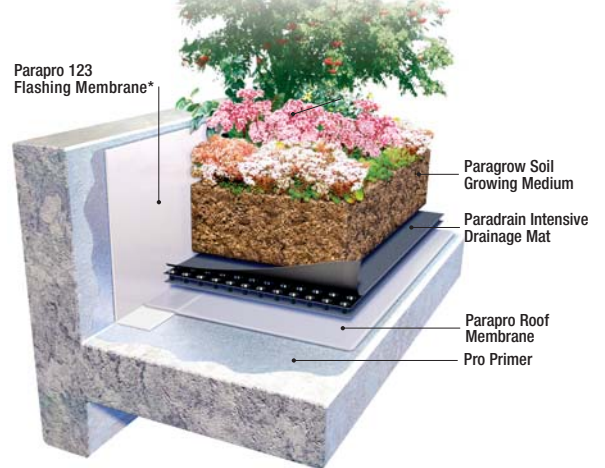
Elaborately designed, park-like roofscapes intended for pedestrian access are possible with an Intensive vegetated system. Intensive systems can support a wide variety of trees, shrubs, plants, and flowers, as well as water features. Intensive vegetated systems:

- Reduce/delay stormwater runoff.
- Help to mitigate the urban heat island effect.
- Offer virtually unlimited design possibilities.
- Extend the livable space of a building.
- Require irrigation and regular maintenance.
- Must be engineered to conform to structural load requirements.

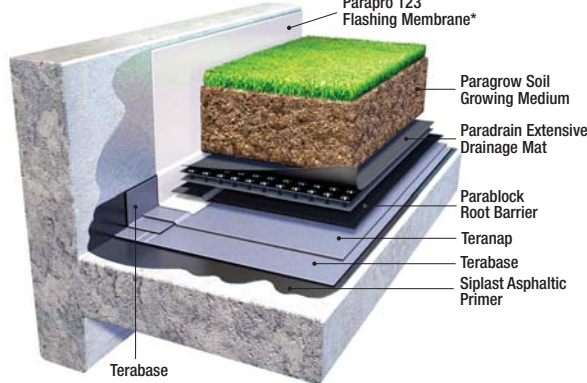
Teranap Intensive



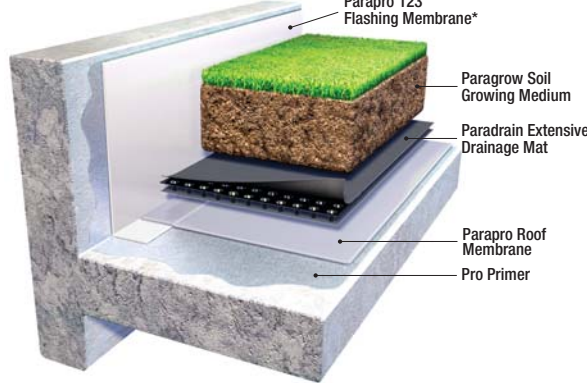
Parapro Intensive



Teranap Lawn



Parapro Lawn



Lawn

Typical depth of growing medium: 8" – 12"
 Typical wet weight: starts at 50 lb/sf

To increase usable space, many owners opt for a Lawn system. By integrating pedestrian access areas with landscaped lawns, owners can offer a premium amenity to building occupants while enjoying environmental benefits.

Lawn systems:

- Reduce/delay stormwater runoff.
- Help to mitigate the urban heat island effect.
- Extend the livable space of a building.
- Require irrigation, fertilization, and maintenance comparable to lawns at grade.

* Contact Siplast for flashing options.



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Cover Photo:

A Siplast Teranap Vegetated Roof System was installed on this automobile manufacturing facility in Michigan, creating the world's largest green roof.